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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,524	09/22/2000	Shih-fu Chang	A31075-PCT-U	7627

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EXAMINER	
KIBLER, VIRGINIA M	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/530,524	CHANG ET AL.	
	Examiner	Art Unit	
	Virginia M Kibler	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5,7-15 is/are rejected.

7)☒ Claim(s) 4-13 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 September 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Appropriate correction is required.

Claim Objections

2. Claims 4-13 are objected to because of the following informalities:

Regarding claim 4, "spacial" should be changed to "spatial" in line 4.

Regarding claim 7, "and" should be changed to "said" in line 3.

Claims 5 and 6 are dependent upon claim 4, and are thereby objected. Claims 8-13 are dependent upon claim 7, and are thereby objected.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the shape comparing regions" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "said false face regions" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 14, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Okada et al. (6,343,141).

Regarding claims 1 and 15, Okada et al. ("Okada") discloses a method for identifying face regions in a color image including providing image representative data (Col. 1, lines 6-35) including data representative of chrominance for incremental portion of the image (Col. 4, lines 43-54), comparing the chrominance representative data for each incremental image portion to chrominance values known to be representative of skin tones (Col. 4, lines 43-54), to thereby distinguish image portions representing skin tone colors from other image portions, and shape comparing regions having contiguous skin tone image portions to templates consistent with the

shape of a human face image to thereby identify possible face regions (Col. 3, lines 28-30 and lines 45-55; Col. 4, lines 63-67 and Col. 5, lines 1-14).

Regarding claim 2, Okada discloses the step of comparing shape of regions including rectangular templates (Col. 4, lines 62-67 and Col. 5, lines 1-14; Figure 8; Col. 9, lines 43-62).

Regarding claim 3, Okada discloses using a rectangular template, but does not specify an aspect ratio. However, the examiner takes Official Notice that the aspect ratio of a rectangular template is conventionally between 1 and 2 and is a design choice.

Regarding claim 4, Okada discloses comparing the spatial frequency characteristics of data representing luminance in the face region to a threshold value and eliminating possible face regions having spatial frequency characteristics below the threshold (Col. 6, lines 43-65).

Regarding claim 5, Okada discloses comparing spatial frequency characteristics or signal energies (Col. 6, lines 43-65), thereby the ratio of vertical energy to horizontal energy.

Regarding claim 14, Okada discloses dividing the image into segments having skin tone image portions and segments not having skin tone image portions (Col. 9, lines 51-67).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (6,343,141) as applied to claim 1 above, and further in view of Krishnamurthy et al. (6,275,614).

Regarding claim 7, Okada discloses DCT compression technique for a sequence of video images, but does not specify an MPEG signal. However, Krishnamurthy et al. ("Krishnamurthy") teaches that it is known to identify face regions (Col. 1, lines 32-65) in a MPEG signal (Col. 2, lines 64-67) wherein comparing chrominance representative components comprises comparing the components in incremental image portions comprising MPEG macroblocks (Col. 3, lines 20-45 and Col. 5, lines 10-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the sequence of video images disclosed by Okada to include specifying a MPEG signal as taught by Krishnamurthy because it is a standard well known compression technique in the art.

Regarding claim 8, Krishnamurthy discloses comparing chrominance representative data applied to a MPEG signal (Col. 3, lines 20-45 and Col. 5, lines 10-20), thereby applied to an I frame (Col. 4, lines 59-65). The arguments analogous to those presented above for claim 7 are applicable to claim 8.

Regarding claim 9, Okada discloses comparing chrominance representative data comprising comparing the DC component of the chrominance representative data (Col. 4, lines 16-54; Col. 10, lines 64-67, Col. 11, lines 1-35). Okada discloses comparing the AC signal energy of data where the AC signal energy is determined based on the DC signal energy (Col. 10, lines 57-67 and Col. 11, lines 1-46), thereby comparing the DC energy.

Regarding claim 10, Okada does not recognize using macroblocks. However, Krishnamurthy teaches that is known to eliminate regions having less than a selected number of

macroblocks (Col. 6, lines 13-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the shape comparison disclosed by Okada to include a selected number of macroblocks as taught by Krishnamurthy because it is well known methodology routinely implemented in MPEG compression techniques.

Regarding claim 11, Okada discloses the step of comparing shape of regions including rectangular templates (Col. 4, lines 62-67 and Col. 5, lines 1-14; Figure 8; Col. 9, lines 43-62), thereby using the top and side edges.

Regarding claim 12, Okada does not recognize using macroblocks. However, Krishnamurthy teaches that is known to eliminate regions having less than a selected number of macroblocks (Col. 6, lines 13-20). Krishnamurthy further teaches that it is known to compare the adjoining ones (Col. 6, lines 13-35) as well as those adjoining edges (Col. 6, lines 64-67 and Col. 7, lines 24-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the shape comparison disclosed by Okada to include a adjoining macroblocks as taught by Krishnamurthy because it refines the classifications to account for features of the face that are not skin-tone (Col. 6, lines 7-26) and because it allows the detection of uncovered areas near the edge of a face resulting in improved visual performance (Col. 7, lines 27-30).

Regarding claim 13, Okada discloses applying a spatial filter (Col. 7, lines 46-58), does not recognize applying a special cross median filter to adjacent macroblocks. However, it would have been an obvious matter of design choice to use the cross median filter because it is conventional methodology for noise reduction without blurring edges and sharp details. Furthermore, Krishnamurthy teaches that is known to compare adjacent macroblocks (Col. 6,

lines 13-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the shape comparison and sequence of video images disclosed by Okada to include comparing MPEG macroblocks as taught by Krishnamurthy because MPEG is a well-known standard in the art and the use of macroblocks enables a quick classification of areas as high importance or low importance.

Allowable Subject Matter

8. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Arts Cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,479,529 to Nakagawa et al. for character and fortune telling;

U.S. Pat. No. 6,597,736 to Fadal for throughput enhanced video communication;

U.S. Pat. No. 6,088,392 to Rosenberg for bit rate coder differential quantization;

U.S. Pat. No. 6,611,613 to Kang et al. for detecting speaking person's eyes and face; and

U.S. Pat. No. 6,148,092 to Qian for detecting skin-tone regions within an image.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

VK
11/19/03

MEHRDAD DASTOURI
PRIMARY EXAMINER
Mehrdad Dastouri